

REMARKS

This application contains claims 1, 3 and 5-39. Claims 14-39 were withdrawn, with traverse, in response to a restriction requirement. Claims 1 and 3 are hereby amended. No new matter has been added. Reconsideration is respectfully requested.

Applicant thanks Examiner LeRoux for the courtesy of a personal interview with Applicant's representative, Sanford T. Colb (Reg. No. 26,856), held in the USPTO on March 9, 2006. In the interview, Mr. Colb argued that the claims currently on file meet the requirements of 35 U.S.C. 101. The Examiner accordingly agreed to withdraw the rejection of the claims under 35 U.S.C. 101. Mr. Colb also presented a draft amendment to claim 1. It was agreed that this amendment would overcome the rejection of the claims under 35 U.S.C. 112, and claim 1 has been amended accordingly. Mr. Colb pointed out that the amendment would additionally distinguish the present invention more clearly over the cited art (Schmuck et al., U.S. Patent 5,893,086), for reasons that are explained in detail hereinbelow. The Examiner agreed to consider this point in the next official action.

Claims 1, 3 and 5-13 were rejected under 35 U.S.C. 112, second paragraph, for indefiniteness on account of the phrase "using a data management application programming interface (DMAPI)." Applicant has amended claim 1, as agreed in the interview, to clarify that a session is created by invoking a function of the DAPI. This amendment is supported literally in the specification (page 21, lines 18-20):

"A new session is created by invoking the DAPI function dm_create_session() on the session node, which then sends a message to SM 34."

Claim 3 has also been amended to correct informalities. Thus, all the claims in this application are now believed to meet the requirements of 35 U.S.C. 112.

Claims 1, 3 and 5-13 were rejected under 35 U.S.C. 101 for not "setting forth any steps in the process" and for not being "tangibly embodied in a computer program residing on a computer-readable medium." Applicant respectfully traverses this rejection. Claim 1 recites steps in a process that takes place in a "cluster of computing nodes": "creating a session," "receiving a request," "sending a notification," "obtaining a DM access right," and finally "performing the operation on the file." As for the requirement of "tangible embodiment," the recent precedential opinion of the Board of Patent Appeals and Interferences (BPAI) in *Ex Parte Lundgren* made clear that there is no legal requirement of any tangible or executable element in a claim. Therefore, Applicant believes the rejection under 35 U.S.C. 101 should be withdrawn, as was agreed in the above-mentioned interview.

Claims 1, 3 and 5-13 were rejected under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a) over Schmuck et al. (U.S. Patent 5,893,086). While disagreeing with the grounds of rejection, Applicant has amended claim 1 in order to further clarify the distinction of the present invention over Schmuck.

Claim 1, as amended, recites a method for managing data storage, in which a session of a data management (DM) application is initiated on a session node in a cluster by invoking a data management application programming interface (DMAPI) of a parallel file system in the cluster. A user application runs on a source node in the cluster. The user application running on the source node submits a request to the parallel file system to perform a file operation on one of the files in the data storage. In response to this request, a

notification of a DM event is sent from the source node to the session node for processing by the DM application. The event is processed at the session node in order to obtain a data management access right, which is then used in performing the file operation from the source node.

Schmuck describes a computer system having a shared parallel disk file system. Schmuck makes no mention or suggestion of any sort of data management application or DMAPI, nor does he describe creating sessions of any kind. In rejecting claim 1, the Examiner simply cited passages in cols. 30 and 32 of Schmuck without comment. The passages cited by the Examiner refer to a metadata node, which "is responsible for handling all the I/O activity of the metadata from and to the disk... All the other nodes communicate with the metadata node... [and] do not access the metadata information on the disk directly" (col. 30, lines 54-62). The Examiner has not indicated which elements in these passages correspond to data management, an application programming interface, or sessions, and has not pointed out any way in which Schmuck might be taken to teach the pertinent functions of these elements that are recited in claim 1.

Nevertheless, in order to further sharpen the distinction of the present invention over the cited art, and in the hope of expediting prosecution of this application, Applicant has amended claim 1 to clarify that the steps of "sending a notification of a DM event" and "performing the operation on the file" are carried out at the source node. These functions of the source node can be seen clearly in Fig. 3 of the present patent application, and are described in the specification on page 24, line 15 - page 25, line 17. In other words, although the data management application session is created at the session node, and the data management access right is obtained at the session node, another

node - the source node - performs an operation on a file using the access right.

Applicant has made this amendment on the assumption that the Examiner has equated Schmuck's metadata node with the session node recited in claim 1. Schmuck's metadata node, however, has exclusive access to the metadata on disk (col. 30, lines 59-62). By contrast, the session node recited in claim 1 permits other nodes (i.e., the source node) to obtain access rights and perform operations on files themselves.

Thus, claim 1, as amended, is believed to be patentable over Schmuck. In view of the patentability of claim 1, dependent claims 3 and 5-13 are also believed to be patentable.

Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these amendments and remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

Respectfully submitted,

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